

ΚΑΦΕ ΚΑΔΟΣ

ΒΡΕΣ ΤΟ ΝΕΟ **ΚΑΦΕ** ΤΗΣ ΓΕΙΤΟΝΙΑΣ ΣΟΥ

Find your new “Coffee” bin at your neighborhood!

Development and Monitoring
an integrated system
of separate biowaste stream
at 38 Municipalities



ΥΠΟΥΡΓΕΙΟ ΠΕΡΙΒΑΛΛΟΝΤΟΣ & ΕΝΕΡΓΕΙΑΣ
ΠΕΡΙΦΕΡΕΙΑ ΚΕΝΤΡΙΚΗΣ ΜΑΚΕΔΟΝΙΑΣ



Με τη συγχρηματοδότηση της Ελλάδας και της Ευρωπαϊκής Ένωσης



ΠΕΡΙΦΕΡΕΙΑΚΟΣ
ΣΥΝΔΕΣΜΟΣ ΦΟΡΕΩΝ
ΔΙΑΧΕΙΡΙΣΗΣ
ΣΤΕΡΕΩΝ ΑΠΟΒΛΗΤΩΝ

ΦΟΔΣΑ
ΚΕΝΤΡΙΚΗΣ ΜΑΚΕΔΟΝΙΑΣ

**Regional Association of Solid
Waste Management Agencies
of Central Macedonia**

*P. Psonopoulos, I. Glarakis, E. Dellaporta, D.
Tangilis, T. Paschali*

Regional Association of Solid Waste Management Agencies of Central Macedonia (FoDSA CM)



7 Regional Units

38 Municipalities

1.8 million Citizens

Solid Waste Facilities in the Region

The mission of FoDSA CM is

- **integrated treatment of Municipal solid waste, aiming to reach the targets that have been set by the European and National Laws.**
- **protection of the environment and the public health.**
- **Provide an advisory role to it's members**

GR Biowaste Policy

Separate collection streams

Sorted and recycled at source

Construction of composting or anaerobic digestion facilities.

Municipalities

31.12.2022

Separate Collection
at source of
Municipal biowaste

Mass catering establishments

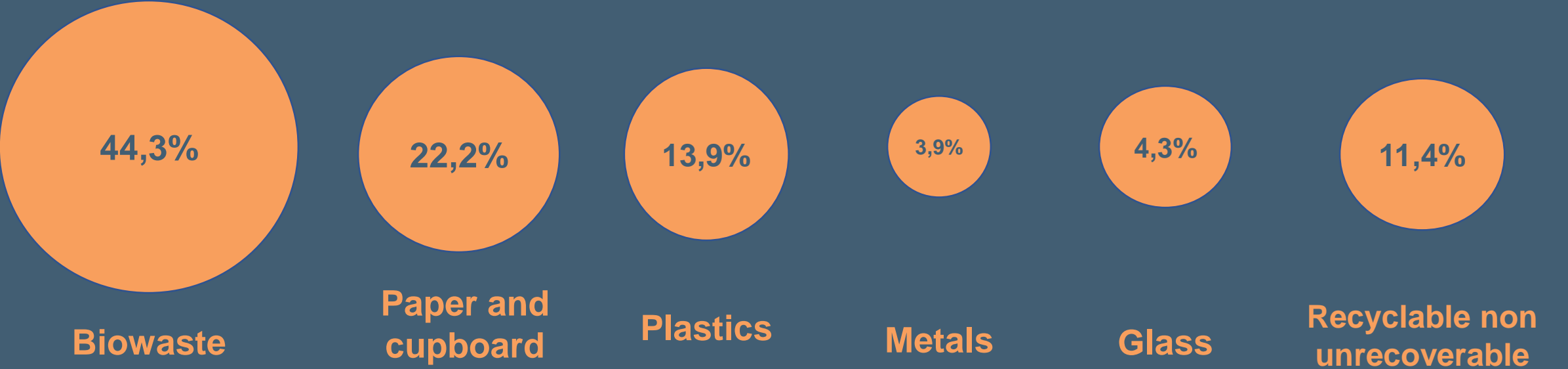
Separate Collection
at source,
regardless of their
capacity

Large Producers

Separate collection at
source:
-Food Processing units
-Food markets (>5,000
sq.m.)
-Hotels (>100 beds)

Composition solid waste analysis

- 20 01 08 biodegradable kitchen and canteen waste
- 20 02 01 biodegradable waste
- 20 03 02 waste from markets



National Waste Management Plan 2020-2030

Funding of Municipal Biowaste Equipment to 38 Municipalities

Single beneficiary of sorting at source bio-waste equipment and tools
Funded by Operational Programme of the Region of Central Macedonia 2014-2020

FODSA CM

- **Equipment Provision**
- **Technical Support of Municipalities and provision of an awareness campaign package**
- **Biowaste monitoring and treatment**

Municipalities

- **Develop and monitoring of the brown bin network**
- **Separate collection and transport to a composting unit**
- **Fuel, collection staff, etc**
- **information and awareness campaign**

Step 1. Programmatic Contracts between FoDSA and Municipalities

Step 2. Consent of assignment

Step 3. Technical and economical offers

Step 4. Draft Tender Documents

Step 5. Judgment Act Integration

Step 6. Public Consultation

Step 7. general final design

Step 8. Tender approval

Step 9. Public Tendering Procedure

Step 10. Selection of tender contractors

Step 11. Pre-approval of contracts

Step 12. Implementation Contracts

**12
Administrative
Steps
Funding
Procedures**

Municipalities



37

Collection
Vehicles



48

37 (5m³) – 11 (14 m³)

Brown Bins



35.940

34.937 (240L) – 1.003 (660L)

- 37 Shredders
- 37 Road Maps for developing separate bio-waste collection networks at Municipal level
- Monitoring programme
- Technical support Municipal separate bio-waste collection system
- Public awareness material

- One (1) 240 L bin per 50 residents
- At Municipalities over 63,000 inh., 5% of 240L bins are replaced by a corresponding number of 660L bins

(collection needs of large biowaste producers and/or areas of high population density)



- Frequency: 7 days/week
- Transport: 20 min to the collection area, 90 min to the composting unit
- Emptying time 120sec.
- Maximum collection routes per day: ≤ 3
- Total route time $\leq 7h$
- Net route time 6.2h
- Capacities: 5m³ and 14m³
- Each municipality will receive a small for flexible

Road Map for the development of the biowaste collection network at Municipal Level



ΕΚΘΕΣΗ ΣΧΕΔΙΑΣΜΟΥ – ΟΔΙΚΟΣ ΧΑΡΤΗΣ

Για την ανάπτυξη δικτύου καφέ κάδου



ΚΑΦΕ ΚΑΔΟΣ

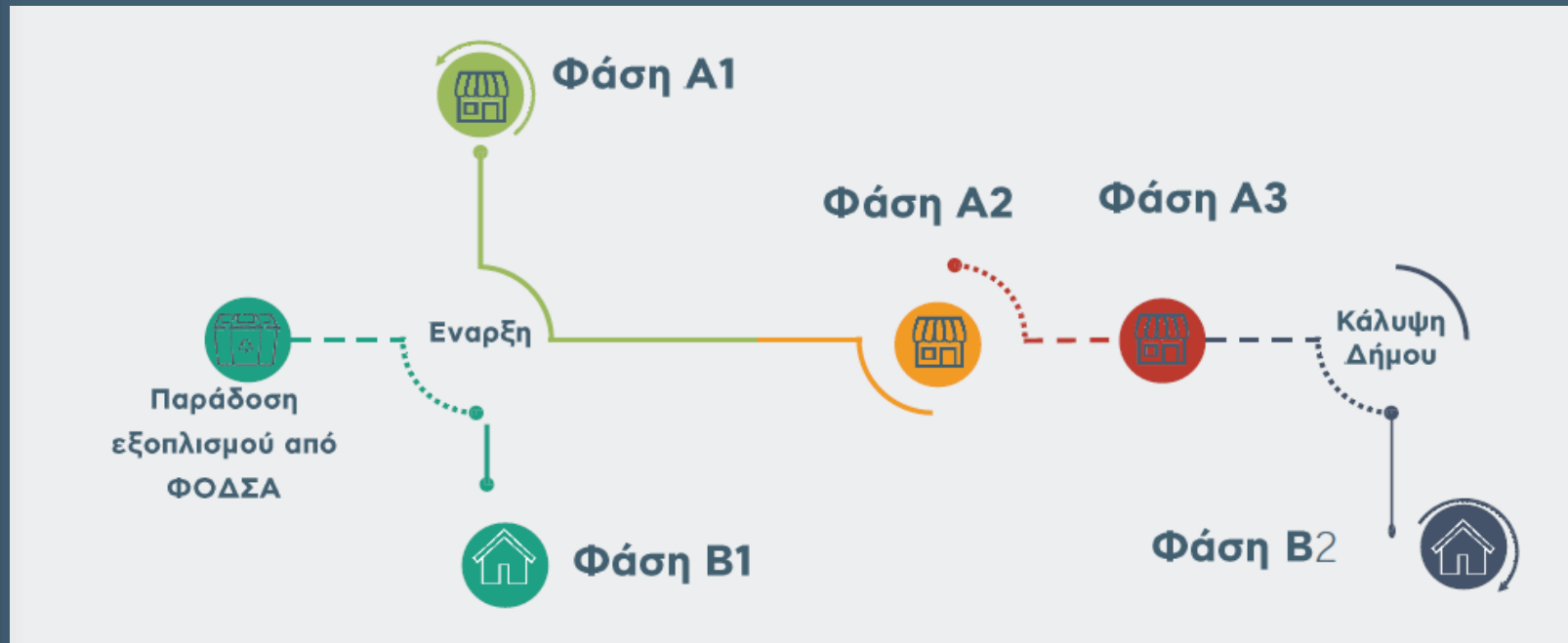
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Phase A. Large producers Network

A1. Large Producers (*Food Markets, Hotels, food processing facilities, Fruit Shops*)

A2. Mass catering establishments, nurseries, kindergartens, hospitals, camps

A3 Restaurants, bakeries, groceries



Phase B. Household Network

B1. Pilot action to households (around 5,000 residents)

B2. Municipal level

Information and Public Awareness Material

Χρήσιμες Συμβουλές

- Αφαιρούμε το υγρό υπολείμματο σε σπασμένο ή με απορροφητικό στην κάδο ή τα τμήματα με εφημερίδα / νερό.
- Απορρίπτουμε τα υπολείμματα τροφών είτε σε σασουλίες (βιοσπονοφόρες) / κατασκευασμένες ή σπιννερ μονοχικές στο κάδο.
- Αποφεύγουμε τη χρήση πλαστικής σακούλας.

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ΕΣΠΑ 2014-2020
ΕΠΙΧΕΙΡΗΣΙΑΚΟ ΠΡΟΓΡΑΜΜΑ
ΑΝΑΚΥΚΛΩΣΗ

Τι ρίχνουμε στον καφέ κάδο



Τα 4 βήματα
για καριέρα συλλογής των βιοσπονοφόρων

1. Διαχωρίζουμε το υγρό υπολείμματο τροφών στην σακούλα.
2. Το απορρίπτουμε στον καφέ κάδο.
3. Το υγρό υπολείμματο τροφών το αφήνουμε να στεγνώσει (αποστειρώνεται).
4. Τα στεγνά υπολείμματα τροφών τα αφήνουμε στην κάδο.

Τι ΔΕΝ ρίχνουμε στον καφέ κάδο



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Φρούτα, λαχανικά και φλούδες Υπολείμματα μαγειρεμένων τροφών Ψωμί, ζυμαρικά, ρύζι και όσπρια



Γαλακτοκομικά (τυρί, κρέμες, γιαούρτι) Τσούφια αυγών & υπολείμματα καφέ-τσάι Μικρά κλαδιά, φύλλα και γκαζόν

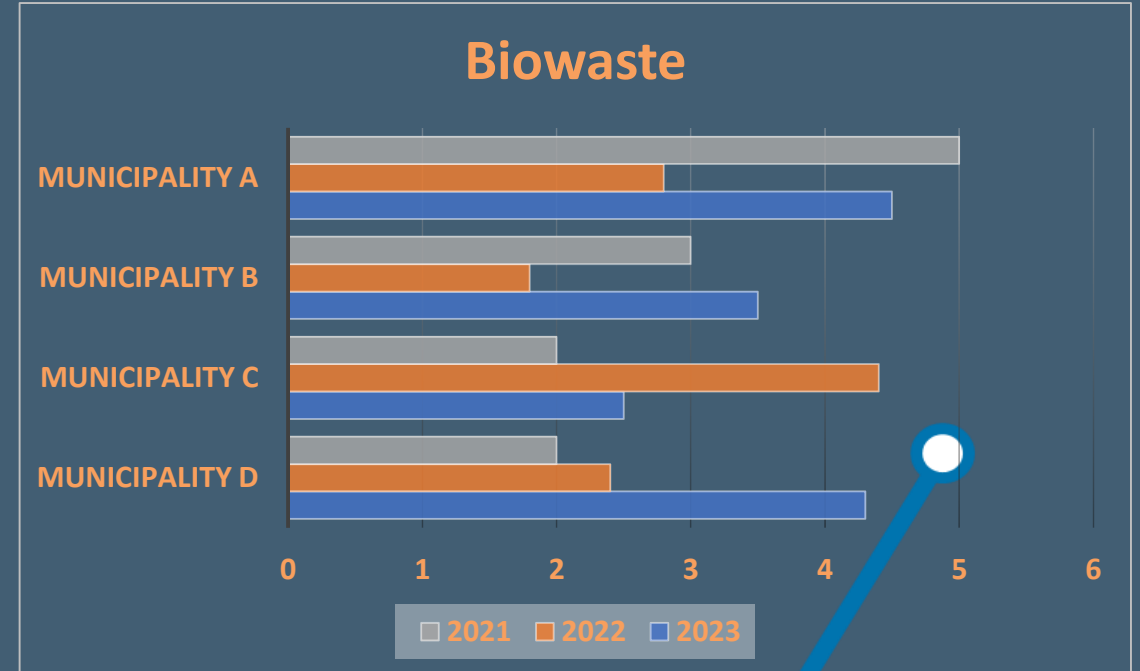
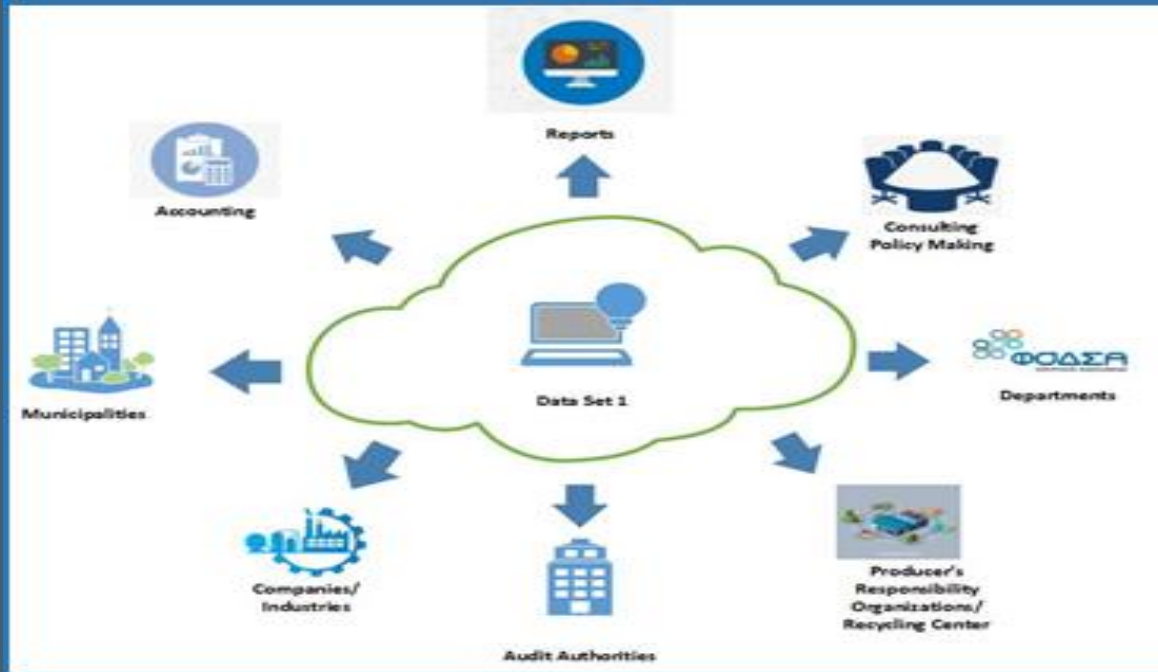
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Monitoring and tracing biowaste flows at Municipal Level



Biowaste quantities

- ✓ per management facility
- ✓ per month of production
- ✓ per year
- ✓ per producer (municipality, food market, hotel ect)



Pricing Policy

Treatment cost per tone				
	Biowaste Treatment fee	Disposal Gate fee residues	Landfill tax (residues)	Total
Biowaste	18€	5.4€ <i>(15% residues x disposal gate fee)</i>	3.75€ <i>(15% x Landfill tax)</i>	27.15€
	Disposal Gate fee		Landfill tax	Total
Mix waste	36€		25€	61€

- permitted threshold of mix waste 15%
- additional discount in the total waste management costs, depending on the amount of separately collected bio-waste in relation to the total amount of solid waste generated by the Municipalities

Results (1/2)

- Formation of a working group with representatives from all departments involved in all stages of the process, as it includes several deadlines, stages and procedures.
- The single funding proposal ensured the fulfilment of the institutional obligation of the local authorities for the simultaneous beginning of the separate biowaste collection (01/01/2023) in the entire Central Macedonia Region regardless of the size, staffing and operational readiness of the local authorities.
- The creation of a common Awareness Campaign material for almost 2,000,000 million inhabitants created a single identity that works cumulatively with multiplying benefits.
- The single funding procedure saved working hours and procedures as the whole process was implemented by one beneficiary and not separately for each Local Authority.

Results (2/2)

- This added value process has formed a tool that could be adapted for respective funding procedures of the Municipalities.
- Contributes to the implementation of the new institutional framework which foresees that the financing of Local Authorities' actions could be delivered through Waste Management Authorities with programmatic contracts.
- Additional personnel for more efficient collection and monitoring will be necessary. A regular exchange of information among waste management departments in each Region or on a national level, is necessary within the same type of settlement structure, along with the set-up of a bench-marking process concerning the improvement of the collection's efficiency.
- The total return on investing in sorting bio-waste at source decreases around 55.5% the pricing policy and also an extra discount is being provided depending on the performance of each Municipality in bio-waste recovery.

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Thank you!

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